

GLUT4

Cat.No. 235 003; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin and azide were added for stabilization. For reconstitution add 50 µl H ₂ O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C to -80°C until use. Antibodies should be stored at +4°C when still lyophilized. Do not freeze! For detailed information, see back of the data sheet.
Applications	WB: 1 : 1000 (AP staining) IP: not tested yet ICC: not tested yet IHC: 1 : 500 IHC-P: 1 : 200
Immunogen	Synthetic peptide corresponding to AA 495 to 509 from human GLUT4 (UniProt Id: P14672)
Reactivity	Reacts with: human (P14672), rat (P19357), mouse (P14142), pig. Other species not tested yet.
Matching control	235-0P

TO BE USED IN VITRO / FOR RESEARCH ONLY
NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS

Background

Insulin stimulates glucose transport into muscle and fat cells by the redistribution of the **glucose transporters 1 and 4 (GLUT 1 and GLUT 4)** from intracellular membrane compartments to the cell surface via GLUT carrying vesicles.

Formation of soluble SNARE complexes mediate the docking and fusion of GLUT 4-containing vesicles with the plasma membrane.

Selected References for 235 003

CHC22 clathrin mediates traffic from early secretory compartments for human GLUT4 pathway biogenesis. Camus SM, Camus MD, Figueras-Novoa C, Boncompain G, Sadacca LA, Esk C, Bigot A, Gould GW, Kioumourtzoglou D, Perez F, Bryant NJ, et al.

The Journal of cell biology (2020) 2191: . . **IHC; tested species: human**

AMP-activated protein kinase is activated in adipose tissue of individuals with type 2 diabetes treated with metformin: a randomised glycaemia-controlled crossover study.

Boyle JG, Logan PJ, Jones GC, Small M, Sattar N, Connell JM, Cleland SJ, Salt IP
Diabetologia (2011) 547: 1799-809. . **WB**

EFR3 and phosphatidylinositol 4-kinase IIIα regulate insulin-stimulated glucose transport and GLUT4 dispersal in 3T3-L1 adipocytes.

Koester AM, Geiser A, Laidlaw KME, Morris S, Cutiongco MFA, Stirrat L, Gadegaard N, Boles E, Black HL, Bryant NJ, Gould GW, et al.

Bioscience reports (2022) 427: . . **WB; tested species: mouse**

Sorting of GLUT4 into its insulin-sensitive store requires the Sec1/Munc18 protein mVps45.

Roccisana J, Sadler JB, Bryant NJ, Gould GW

Molecular biology of the cell (2013) 2415: 2389-97. . **WB**

Selected General References

DOC2B: a novel syntaxin-4 binding protein mediating insulin-regulated GLUT4 vesicle fusion in adipocytes.

Fukuda N, Emoto M, Nakamori Y, Taguchi A, Miyamoto S, Uraki S, Oka Y, Tanizawa Y

Diabetes (2009) 582: 377-84. .

Regulation of insulin secretion and GLUT4 trafficking by the calcium sensor synaptotagmin VII.

Li Y, Wang P, Xu J, Corelick F, Yamazaki H, Andrews N, Desir GV

Biochemical and biophysical research communications (2007) 3623: 658-64. .

Mechanism and regulation of GLUT-4 vesicle fusion in muscle and fat cells.

Foster LJ, Klip A

American journal of physiology. Cell physiology (2000) 2794: C877-90. .

Regulation of insulin-stimulated GLUT4 translocation by Munc18c in 3T3L1 adipocytes.

Thurmond DC, Ceresa BP, Okada S, Elmendorf JS, Coker K, Pessin JE

The Journal of biological chemistry (1998) 27350: 33876-83. .

Intracellular targeting of the insulin-regulatable glucose transporter (GLUT4) is isoform specific and independent of cell type.

Haney PM, Slot JW, Piper RC, James DE, Mueckler M

The Journal of cell biology (1991) 1144: 689-99. .

Access the online factsheet including applicable protocols at <https://sysy.com/product/235003> or scan the QR-code.



FAQ - How should I store my antibody?

Shipping Conditions

- All our antibodies and control proteins / peptides are shipped lyophilized (vacuum freeze-dried) and are stable in this form without loss of quality at ambient temperatures for several weeks.

Storage of Sealed Vials after Delivery

- **Unlabeled** and **biotin-labeled antibodies** and **control proteins** should be stored at 4°C before reconstitution. **They must not be stored in the freezer when still lyophilized!** Temperatures below zero may cause loss of performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long term storage (several months) may lead to aggregation.
- **Control peptides** should be kept at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- The storage freezer must not be of the frost-free variety ("no-frost freezer"). This cycle between freezing and thawing (to reduce frost-build-up), which is exactly what should be avoided. For the same reason, antibody vials should be placed in an area of the freezer that has minimal temperature fluctuations, for instance towards the back rather than on a door shelf.
- Aliquot the antibody and store frozen (-20°C to -80°C). Avoid very small aliquots (below 20 µl) and use the smallest storage vial or tube possible. The smaller the aliquot, the more the stock concentration is affected by evaporation and adsorption of the antibody to the surface of the storage vial or tube. Adsorption of the antibody to the surface leads to a substantial loss of activity.
- The addition of glycerol to a final concentration of 50% lowers the freezing point of your stock and keeps your antibody at -20°C in liquid state. This efficiently avoids freeze and thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C.

Monoclonal Antibodies

- **Ascites** and **hybridoma supernatant** should be stored at -20°C up to -80°C. **Prolonged storage at 4°C is not recommended!** Unlike serum, ascites may contain proteases that will degrade the antibodies.
- **Purified IgG** should be stored at -20°C up to -80°C. Adding a carrier protein like BSA will increase long term stability. Many of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Polyclonal Antibodies

- **Crude antisera:** With anti-microbials added, they may be stored at 4°C. However, frozen storage (-20°C up to -80°C) is preferable.
- **Affinity purified antibodies:** Less robust than antisera. Storage at -20°C up to -80°C is recommended. Adding a carrier protein like BSA will increase long term stability. Most of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Fluorescence-labeled Antibodies

- Store as a liquid with 1 : 1 (v/v) glycerol at -20°C. Protect these antibodies from light exposure.

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All our purified antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the amount of deionized water given in the respective datasheet. If higher volumes are preferred, add water as mentioned above and then the desired amount of PBS and a stabilizing carrier protein (e.g. BSA) to a final concentration of 2%. Some of our antibodies already contain albumin. Take this into account when adding more carrier protein. For complete reconstitution, carefully remove the lid. After adding water, briefly vortex the solution. You can spin down the liquid by placing the vial into a 50 ml centrifugation tube filled with paper.
- If desired, add small amounts of azide or thimerosal to prevent microbial growth. This is especially recommended if you want to keep an aliquot a 4°C.
- After reconstitution of fluorescence-labeled antibodies, add 1 : 1 (v/v) glycerol to a final concentration of 50%. This lowers the freezing point of your stock and keeps your antibody in liquid state at -20°C.
- Glycerol may also be added to unlabeled primary antibodies. It is a suitable way to avoid freeze-thaw cycles.
- Please refer to our **tips and hints for subsequent storage** of reconstituted antibodies and control peptides and proteins.